

## 3500 Series Machinery Protection System Expands Functionality



by Jeff Rudd

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**B**ently Nevada continues to add new products and features to our 3500 Series Machinery Protection System. Recent product additions include an integrated touchscreen PC Display, a space-saving Mini-Rack, a new 3500 monitor module specifically for addressing hydroturbine vibration characteristics (see our companion article on page 10), and two measurement options that complete our Turbine Supervisory Instrumentation (TSI) offering – Shaft Absolute Measurements and Valve Position Monitoring.

### PC Display

The Integrated PC Display (model 3500/95) is a full-featured, panel-mounted, flat panel display with touchscreen navigation capabilities. The display's self-contained computer features integral floppy and CD-ROM drives, as well as serial, parallel, and Ethernet ports. The 3500/95 is available in 12-inch and 15-inch options.

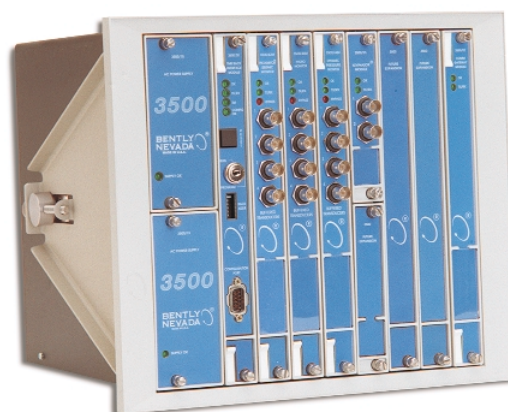


**3500/95 Display**

Applications in control rooms, or those that need to be able to view more than one 3500 rack, are good candidates for the 3500/95. Each PC Display features factory-loaded 3500 Configuration, Data Acquisition, and Display software.

### Mini-Rack

The 3500 Mini-Rack is designed for applications in which the standard rack channel density may not be fully utilized. These applications include dedicated Overspeed Detection Systems (ODS), Reciprocating machine, Hydroelectric machine, and Gas Turbine machine monitoring. The Mini-Rack has a total of 10 available slots. It meets the same classifications as the standard rack, just in a smaller package and at a lower price.



**3500 Mini-Rack**

The Mini-Rack is available in Panel and Rack mounting configurations. There is also a Weatherproof Housing Door available.

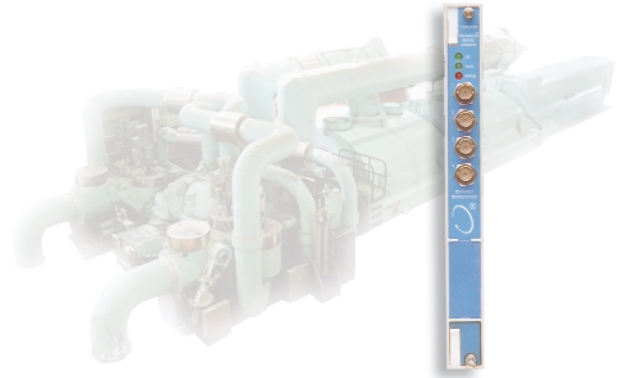
### 3500 TSI

For the special needs of large steam turbine generator sets, the 3500 Turbine Supervisory Instrumentation (TSI) offering is now complete with the addition of Shaft Absolute and Valve Position channel measurement options. Shaft Absolute

is a new channel measurement option in the 3500/42 monitor, and Valve Position is a new channel measurement option in the 3500/45 Position monitor. The Shaft Absolute channel option enables simultaneous monitoring and display of Shaft Relative, Bearing Absolute, and Shaft Absolute measurements.

The Valve Position measurement option supports ac Linear Variable Differential Transformer (LVDT), Rotary Potentiometer, and Rotary Position Transducer (RPT) inputs.

With over 3,600 systems shipped, the 3500 Series Machinery Protection System continues to be the world's monitoring system of choice. Contact your local Bently Nevada Solution Specialist to learn more. ☺



**The 3500 System can now address all Turbine Supervisory Instrumentation measurements.**

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## Rotor Kit Has New Accessory for the ServoFluid™ Control Bearing

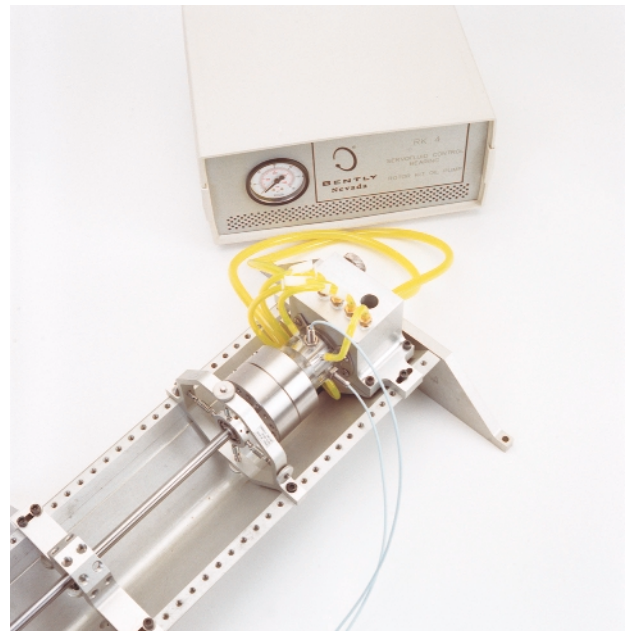


by Nate Linder

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**F**or years, the RK-4 Rotor Kit has been used extensively for simulating shaft vibration by duplicating vibration-producing phenomena found in rotating machinery. With the use of Bently Nevada's unique non-contacting proximity transducers, the rotor kit allows observation of shaft bow, rotor stiffness, amount and angle of unbalance, shaft rub, and rotor/bearing relationships, to name a few. The rotor kit has been a staple in the education and understanding of rotating machinery.

Bently Nevada's latest developments with the ServoFluid™ Control Bearing required equipment to demonstrate the most recent advances in bearing technology. A new ServoFluid Control Bearing rotor kit option is now available to demonstrate how external pressurization of a fully lubricated fluid bearing affects the threshold of stability for a rotor system. In particular, the fluid-induced instability known as whirl can be made to appear and disappear by changing rotor



**RK-4 Rotor Kit with ServoFluid™ Control Bearing accessory installed.**

speed and/or fluid supply pressure. Contact your Bently Nevada sales professional for more information on this new rotor kit option. ☺